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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,972	03/09/2005	Koichi Nakahara	KPO-SUN-P1/SN-71/US	6169
44702	7590	12/16/2005	EXAMINER	
OSTRAGER CHONG FLAHERTY & BROITMAN PC 250 PARK AVENUE, SUITE 825 NEW YORK, NY 10177			WITHERSPOON, SIKARL A	
			ART UNIT	PAPER NUMBER

1621

DATE MAILED: 12/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/510,972

Applicant(s)

NAKAHARA ET AL.

Examiner

Sikarl A. Witherspoon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/9/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Ikushima et al (US 6,300,523).

The reference discloses a process for preparing pinacolone by reacting pinacol in supercritical water. Although the references does not expressly state that hydrogen is also produced by the reaction, the examiner contends that hydrogen will inherently be generated from the water molecules reacting in supercritical state with the alcohol, i.e., pinacol; as such, Ikushima et al anticipate the instant claim.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikushima et al and further in view of Catallo et al (US 6,180,845).

The instant claims are drawn to the generation of water-derived hydrogen by reacting water in a critical state with a secondary alcohol, and to the production of a carbonyl compound by reacting a primary or secondary alcohol with subcritical or supercritical water.

Ikushima et al teach a process wherein water is supplied to a reactor and brought to supercritical state and then reacted with pinacol to form pinacolone (abstract and col. 5, lines 1-48).

The differences between Ikushima et al and the present claims are that Ikushima et al teach a reactant that is a tertiary alcohol, i.e., pinacol, does not expressly mention that hydrogen is produced, and does not teach a deoxygenated atmosphere.

First, the examiner contends that while silent in this regard, it would have been apparent to a person of ordinary skill in the art that hydrogen would have inherently been generated from the water molecules reacting in supercritical state with the alcohol, i.e., pinacol in the process taught by Ikushima et al. The examiner also contends that it would have been obvious to a person of ordinary skill that if one of the R-groups in the formula for pinacol disclosed at column 5, lines 40-45 of Ikushima et al, that is, if the compound was a secondary alcohol, the reaction with supercritical water would still proceed with the generation of hydrogen as the two hydrogen molecules found in a water molecule dissociate.

Ikushima et al do not mention a deoxygenated atmosphere; however, Catallo et al teach a process for the transformation of hydrocarbon mixtures in supercritical water preferably under anoxic or as close to anoxic conditions as possible. It therefore would

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have been obvious to a person of ordinary skill in the art, in light of the combined reference teachings to modify the reaction conditions taught by Ikushima et al and adopt a deoxygenated reaction atmosphere as per Catallo et al, one of ordinary skill being motivated to make such a modification of reaction conditions by the desire to avoid the production of carbon oxides, as suggested by Catallo et al (col. 4, lines 19-22).

The examiner would like to request that applicants submit a PTO-1449 for the IDS filed April 14, 2005. No copy of said document has been received.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikarl A. Witherspoon whose telephone number is 571-272-0649. The examiner can normally be reached on M-F 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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*Sikarl A. Witherspoon*  
**SIKARL A. WITHERSPOON**  
**PATENT EXAMINER**